UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,293	02/13/2002	Ekaterina Alexsandrovna Tabolina	US-1450	3493

38108 7590 03/10/2006

CERMAK & KENEALY LLP
ACS LLC
515 EAST BRADDOCK ROAD
SUITE B
ALEXANDRIA, VA 22314

EXAMINER	
GANGLE, BRIAN J	
ART UNIT	**PAPER NUMBER**
1645	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,293	TABOLINA ET AL.	
	Examiner	Art Unit	
	Brian J. Gangle	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *4-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *see attached*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Information Disclosure Statements filed 6/17/2002; 12/31/2002; 6/17/2003; 4/1/2005.

DETAILED ACTION

Applicant's amendment filed 6/17/2002 is acknowledged. Claims 1-30 are pending. Claims 1-3 are currently under examination.

It is noted that the claims are drawn to proteins comprising SEQ IDs 3 and 5. However, SEQ IDs 3 and 5 are nucleotide sequences that appear to encode SEQ IDs 4 and 6. Therefore, it is assumed that applicant intended the claims to be drawn to proteins comprising SEQ IDs 4 and 6. The claims are therefore interpreted as such. Correction is required. Claims must comply with the sequence rules as set forth in 37 C.F.R. 1.821(d).

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. See for example, page 3. Applicant should review the specification to correct any other use of embedded hyperlink and/or other form of browser-executable code.

Information Disclosure Statement

The information disclosure statements filed 6/17/2002, 1/6/2003, 6/17/2003, and 4/1/2005 have been considered. Initialed copies are enclosed.

Election/Restrictions

Applicant's election with traverse of Group I in the response filed on 1/24/2006 is acknowledged. The traversal is on the ground(s) that it would not pose undue burden to examine all claims together because the subject matter is related and would constitute an overlapping search. This is not found persuasive because MPEP 803 states that restriction is proper between patentably distinct inventions where the inventions are (1) independent or distinct as claimed and (2) a serious search and examination burden is placed on the examiner if restriction is not required.

The term "distinct" is defined to mean that two or more subjects as disclosed are related, for example, as product and method of use, etc., but are capable of separate manufacture, use or sale as claimed, and are patentable over each other (see MPEP 802.01). Restriction between the inventions is deemed to be proper for the reasons previously set forth.

In regard to burden of search and examination, MPEP 803 states that a burden can be shown if the examiner shows either separate classification, different field of search or separate status in the art. Classification of subject matter is merely one indication of the burdensome nature of search. The literature search, particularly relevant in this art, is not co-extensive, because, for example, the bacteria of the inventions contain proteins with different SEQ ID NOs, and that are physically and functionally distinct chemical entities. Additionally, it is submitted that the inventions have acquired a separate status in the art. Clearly different searches and issues are involved in the examination of each Group.

The requirement is still deemed proper and is therefore made FINAL.

Claims 4-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b).

Currently, claims 1-3 are under examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The instant claim is drawn to an L-amino acid producing bacterium belonging to the genus *Escherichia* wherein the bacterium has been modified so that the L-amino acid production by said bacterium should be enhanced by "enhancing activities of proteins as defined in the following (A) or (B) and (C) or (D) in a cell of said bacterium: (A) a protein which comprises the amino acid Sequence shown in SEQ ID NO: 4 in Sequence listing; (B) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 4 and which has an

activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; (C) a protein which comprises the amino shown in SEQ ID NO: 6 in Sequence listing; (D) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several Amino acids in the amino acid sequence shown in SEQ ID NO: 6 in Sequence listing and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs." Bacteria of the genus *Escherichia* can, in nature, modify themselves, in response to environmental conditions, so that amino acid production is enhanced. This natural product appears to be the same as the product claimed by the applicant because it appears to possess the same functional characteristics, i.e. enhanced amino acid production. Further, both SEQ IDs 4 and 6 are found naturally in *E. coli* and could be expected to have enhanced activity in a naturally found bacterium having enhanced amino acid production.

The claimed invention is drawn to a product of nature. Products of nature are not patentable because they do not reflect the "hand of man" in the production of the product or manufacturing process.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an L-amino acid producing bacterium belonging to the genus *Escherichia*, wherein the bacterium has been modified so that the production of threonine, valine, proline, leucine, and methionine by said bacterium is enhanced by recombinant expression of proteins which consist of SEQ ID 4 and SEQ ID 5, wherein the the transformation

is performed with a multicopy vector; does not reasonably provide enablement for an L-amino acid producing bacterium belonging to the genus *Escherichia* wherein the bacterium has been modified so that the L-amino acid production by said bacterium should be enhanced by "enhancing activities of proteins as defined in the following (A) or (B) and (C) or (D) in a cell of said bacterium: (A) a protein which comprises the amino acid Sequence shown in SEQ ID NO: 4 in Sequence listing; (B) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 4 and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; (C) a protein which comprises the amino shown in SEQ ID NO: 6 in Sequence listing; (D) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 6 in Sequence listing and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs" (claim 1); and to the bacterium of claim 1 wherein said activities of proteins as defined in (A) or (B) and (C) or (D) are enhanced by transformation of said bacterium with DNA coding for protein as defined in (A) or (B), and (C) or (D), or by alteration of expression regulation sequence of said DNA on the chromosome of the bacterium (claim 2); and to the bacterium of claim 2 wherein the transformation is performed with a multicopy vector (claim 3). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The claims are drawn to a bacterium which has enhanced activity of either (a) a protein comprising SEQ ID NO: 4 or (b) a protein which comprises an amino acid sequence including deletion, substitution, insertion, or addition of one or several amino acids in the amino acid sequence of SEQ ID NO: 4, which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; and either (c) a protein comprising SEQ ID NO: 6 or (d) a protein which comprises an amino acid sequence including deletion, substitution, insertion, or addition of one or several amino acids in the amino acid sequence of SEQ ID NO: 6, which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs. Any combination of (a) or (b), and (c) or (d) is encompassed by the claims. While (a) and (c) are limited to proteins comprising SEQ IDs 4 and 6, (b) and (d) are broadly drawn to

practically any protein that enhances bacterial resistance to amino acids. The recited language "an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids," requires only that a sequence of two amino acids be found in the claimed SEQ ID NO., and the amino acid sequence can then have one or "several" changes. With no limiting definition of "several" in the specification, the genus of proteins that meets the requirements of the claim is very broad. The claims are also drawn to said bacterium where the enhanced activity is due to alteration of "expression regulation sequence of said DNA on the chromosome of the bacterium."

The specification teaches a bacterium that has been transformed by a plasmid bearing the nucleic acid encoding SEQ IDs 4 and 6. The specification further teaches that, under appropriate conditions, said bacterium is capable of producing increased levels of threonine, valine, proline, leucine, and methionine. The specification lacks any teaching of a protein which comprises an amino acid sequence including deletion, substitution, insertion, or addition of one or several amino acids in the amino acid sequence of SEQ ID NO: 4 or 6, which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; or that said proteins would cause enhanced amino acid production. There is no guidance in the specification regarding which amino acids can be deleted, substituted, inserted, or added while retaining activity. The specification further lacks any teaching that a protein comprising either SEQ ID 4 or 6 by itself would lead to enhanced amino acid production, or that the combination would lead to enhanced production of amino acids other than threonine, valine, proline, leucine, and methionine. Besides the amino acid sequences of SEQ IDs 4 and 6, the only information the specification gives on the two proteins is that they are putative transmembrane proteins with unknown function. The specification suggests that they might be membrane proteins with L-amino acid excretion activity (p. 3, lines 11-26), but offers no evidence of this and no information on the regulation of these proteins.

The art is very limited with regard to said proteins. The nucleic acid sequences encoding both SEQ ID 4 and SEQ ID 6 were disclosed in Blattner *et al.* (IDS filed 6/17/2002, document AW) as putative proteins. There is no information in the art regarding the function, or regulation of these proteins. The nucleic acid sequences that comprises regulatory sequences or the proteins that act as promoters or repressors of said proteins are completely unknown. The art

does show that mature biologically active forms of many proteins are post-translationally modified by glycosylation, phosphorylation, prenylation, acylation, ubiquitination or one or more of many other modifications and many proteins are only functional if specifically associated or complexed with other molecules including DNA, RNA, proteins and organic and inorganic cofactors. The type pr protein modification and the sites modified at a specific cellular state can usually not be determined from the gene sequence alone (Haynes *et al.*, Electrophoresis, 19:1862-1871, 1998, see p. 1863, paragraph bridging cols. 1-2). In addition, Skolnick *et al.* (Trends in Biotech., 18:34-39, 2000) state that sequence-based approaches to function prediction fails to take into account the powerful three-dimensional information displayed by protein structures (p. 34, col. 2, paragraph 4), and that even when the structure is determined, "knowing the protein structure by itself is insufficient to annotate a number of functional classes and is also insufficient for annotating the specific details of protein function" (p. 35, box 2). The art further shows that the alteration of even a single amino acid can change the activity of a protein. In the case of Sickle-cell anemia, a change of one amino acid from glutamate to valine leads to deformed erythrocytes (Voet *et al.*, Biochemistry, 2nd ed., John Wiley and Sons, Inc, 1995, p. 124). Similarly, in the case of antigen-antibody interaction, McGuinness *et al.* (*Lancet* 337: 514-517, March 1991) taught that a point mutation generating a single amino acid change in a P1.16-specific epitope in the VR2 region of the *porA* gene of a strain of *Neisseria meningitidis* of subtype P1.7,16 resulted in "striking changes in the structural and immunological properties of the class 1 protein" of this isolate (see abstract and page 514). Thus, the alteration of "one or several amino acids" can lead to substantial changes in a protein, which might or might not enhance the activity of the protein. Claim 1 requires that activity of said proteins be enhanced. There is no means provided in the specification to quantify the activity of said proteins alone or in combination. Without knowing the function of said proteins, one would not know how to assay the activity of said proteins. Claim 2 requires that the activities of said proteins be enhanced by transformation of the bacterium with DNA coding for the proteins or by "alteration of expression regulation sequence of said DNA on the chromosome of the bacterium." As with claim 1, if one does not know how the proteins are regulated or what their function is, it is not possible to assay their activity and it would not be apparent that simple transformation would increase the activity. Also, with no knowledge of the regulation of said proteins, one would not

know how to "alter expression regulation sequence of said DNA on the chromosome of the bacterium" or even if said alteration would accomplish the goal of enhanced activity. Moreover, the regulation of protein expression is a complex process that is completely undescribed regarding the putative proteins of the instant invention. There is no description of the structure or activity of the promoter necessary for transcription or whether there is a repressor, inducer, or sigma factor involved. There is no information in the art regarding whether the regulation of these proteins is cis-acting or trans-acting or whether the genes are under positive or negative control. Therefore, because neither the art or the specification teaches the nucleic acid sequences or proteins responsible for regulation of either the nucleic acid sequences of SEQ ID 3 or 5 or any variant thereof, it would require undue experimentation on the part of the skilled artisan to make and use the claimed invention; therefore the full scope of the claims is not enabled.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, and dependent claims 2-3, claim 1 recites the phrase "L-amino acid production by said bacterium should be enhanced." It is unclear what applicant means by "should." If the protein activity is not enhanced, what is the invention? Further, in steps B and D, the limitation, "a protein... which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs," is recited. First, a protein cannot have the activity of making a bacterium, whether the bacterium has enhanced resistance or not. Second, the sentence structure is such that the claim is drawn to analogs of a bacterium. What is an analog to a bacterium?

As to claim 2 and dependent claim 3, claim 2 is drawn, in part, to a bacterium wherein said activities of said proteins are enhanced by "alteration of expression regulation sequence of said DNA." Does this mean alteration of the expression of regulation sequences, or alteration of sequences that regulate expression?

Claim Rejections - 35 USC § 102 and 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa *et al.* (US Patent 4,996,147, 1991).

The instant claims are drawn to an L-amino acid producing bacterium belonging to the genus *Escherichia* wherein the bacterium has been modified so that the L-amino acid production by said bacterium should be enhanced by "enhancing activities of proteins as defined in the following (A) or (B) and (C) or (D) in a cell of said bacterium: (A) a protein which comprises the amino acid Sequence shown in SEQ ID NO: 4 in Sequence listing; (B) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 4 and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; (C) a protein which comprises the amino shown in SEQ ID NO: 6 in Sequence listing; (D) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 6 in Sequence listing and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs (claim 1); and to the bacterium of claim 1 wherein said activities of proteins as defined in (A) or (B) and (C) or (D) are enhanced by transformation of said bacterium with DNA coding for protein as defined in (A) or (B), and (C) or (D), or by alteration of expression regulation sequence of said DNA on the chromosome of the bacterium (claim 2).

Furukawa *et al.* teach a bacterium belonging to the genus *Escherichia* and having resistance to rifampicin, lysine, methionine, aspartic acid and homoserine, and an ability to produce L-threonine until L-threonine is accumulated in the culture (paragraph bridging cols. 1-2). The bacterium of Furukawa has an enhanced ability to produce L-threonine (col. 3, lines 48-52). The products of the prior art reference appear to be the same or an obvious or analogous

variant of the product claimed by the applicant because they appear to possess the same or similar functional characteristics, i.e. a bacterium belonging to the genus *Escherichia* which has enhanced L-amino acid production. The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity, greater stability and/or practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon. Further, the proteins named in the instant application are proteins found naturally in *E. coli*. Thus, in the absence of evidence to the contrary, the bacterium of Furukawa *et al.* has enhanced amino acid production due to an alteration in the expression of regulation sequences of DNA on the chromosome of the bacterium.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano *et al.* (European Patent Application Publication 0 643 135 A1, 1995).

The instant claims are drawn to an L-amino acid producing bacterium belonging to the genus *Escherichia* wherein the bacterium has been modified so that the L-amino acid production by said bacterium should be enhanced by "enhancing activities of proteins as defined in the following (A) or (B) and (C) or (D) in a cell of said bacterium: (A) a protein which comprises the amino acid Sequence shown in SEQ ID NO: 4 in Sequence listing; (B) a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 4 and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs; (C) a protein which comprises the amino shown in SEQ ID NO: 6 in Sequence listing; (D) a protein

which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO: 6 in Sequence listing and which has an activity of making bacterium having enhanced resistance to L-amino acids and/or its analogs (claim 1); and to the bacterium of claim 1 wherein said activities of proteins as defined in (A) or (B) and (C) or (D) are enhanced by transformation of said bacterium with DNA coding for protein as defined in (A) or (B), and (C) or (D), or by alteration of expression regulation sequence of said DNA on the chromosome of the bacterium (claim 2); and to the bacterium of claim 2 wherein the transformation is performed with a multicopy vector (claim 3).

Sano *et al.* teach a bacterium of the genus *Escherichia* that has been transformed by introducing recombinant DNA into the cells using a multicopy vector (p. 3, lines 11-14; and p. 6, line 23). Additionally, the products of the prior art reference appear to be the same or an obvious or analogous variant of the product claimed by the applicant because they appear to possess the same or similar functional characteristics, i.e. a bacterium belonging to the genus *Escherichia* which has enhanced L-amino acid production. The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity, greater stability and/or practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon. Further, the proteins named in the instant application are proteins found naturally in *E. coli*. Thus, in the absence of evidence to the contrary, the bacterium of Sano *et al.* has enhanced amino acid production due to an alteration in the expression of regulation sequences of DNA on the chromosome of the bacterium.

Status of the Claims

All claims stand rejected.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Gangle whose telephone number is 571-272-1181. The examiner can normally be reached on M-F 8:00 am - 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynette Smith can be reached on 571-272-0864.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

BG
Brian Gangle
AU 1645

Patricia A. Duffy
PATRICIA A. DUFFY
PRIMARY EXAMINER